TCP/IP REFERENCE MODEL

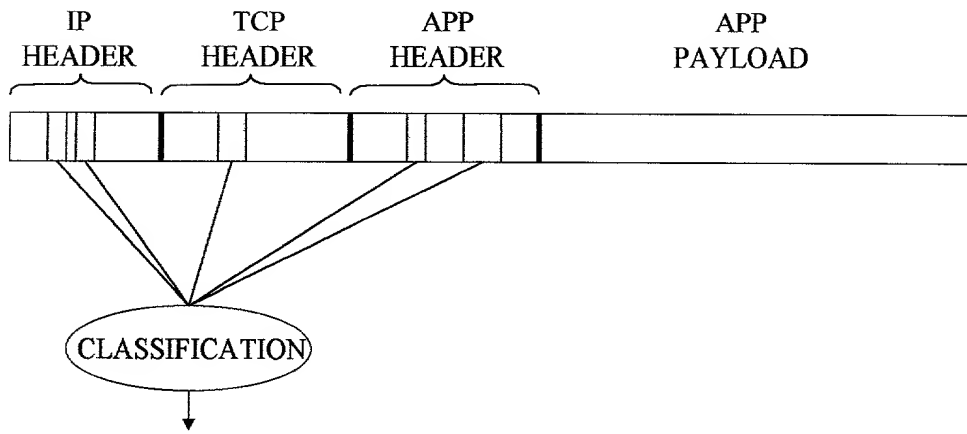| Layer	
18→ APPLICATION LAYER	TELNET, FTP, SMTP, DNS
16→ TRANSPORT LAYER	TCP, UDP
14→ NETWORK LAYER	IP
12→ DATA LINK LAYER	ETHERNET, TOKEN RING, DQDB
10→ PHYSICAL LAYER	FIBER OPTICS, COAXIAL CABLE

FIG. 1
(PRIOR ART)

EXAMPLE PACKET

IP
HEADER
TCP
HEADER
APP
HEADER
APP
PAYLOAD

CLASSIFICATION

FIG. 2
(PRIOR ART)

IP PACKET (DATAGRAM)

0	4	8		16	19	24	31

VERS	HLEN	TYPE SERVICE	TOTAL LENGTH		
IDENTIFICATION			FLAGS	FRAGMENT OFFSET		
TIME TO LIVE	PROTOCOL		HEADER CHECKSUM		
SOURCE IP ADDRESS					
DESTINATION IP ADDRESS					
IP OPTIONS (IF ANY)			PADDING		
DATA					
……..					

FIG. 3
(PRIOR ART)

TCP SEGMENT

0 4 10 16 24 31	
SOURCE PORT	DESTINATION PORT
SEQUENCE NUMBER	
ACKNOWLEDGEMENT NUMBER	
HLEN | RESERVED | CODE BITS	WINDOW
CHECKSUM	URGENT POINTER
OPTIONS (IF ANY)	PADDING
DATA	
....	
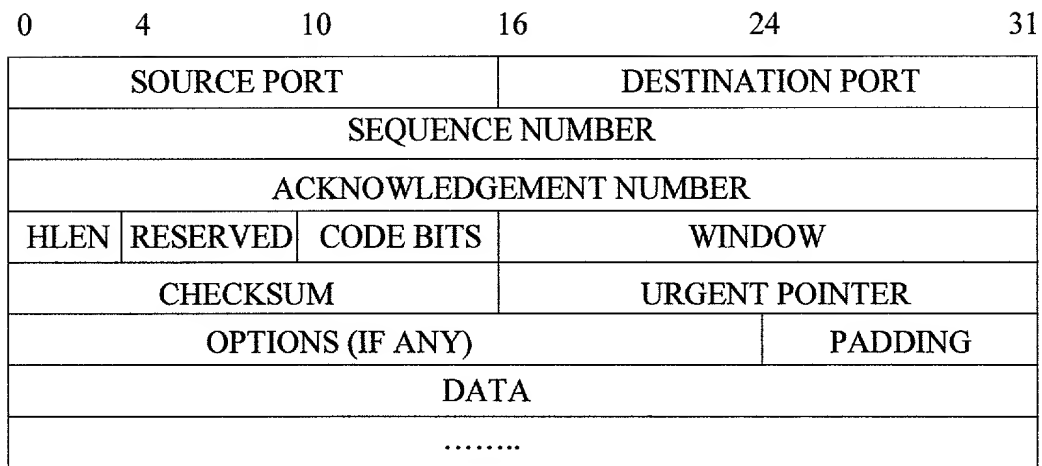
FIG. 4
(PRIOR ART)

NETWORK ARCHITECTURE

26

20→

BACKBONE NETWORK
MPLS, ATM,
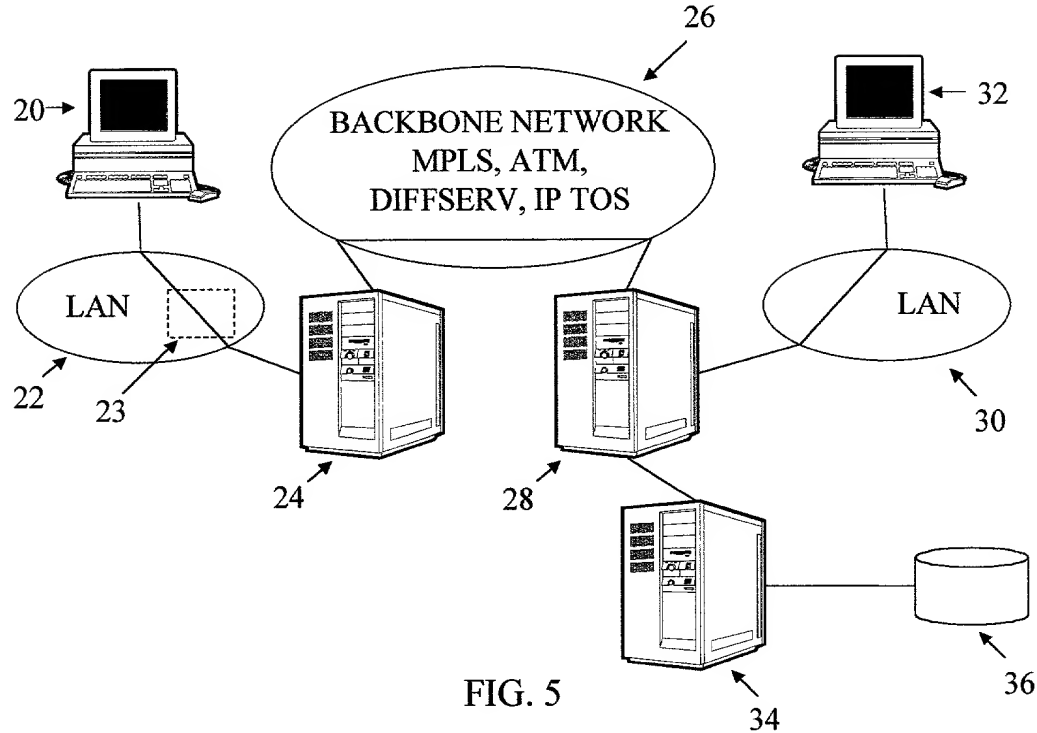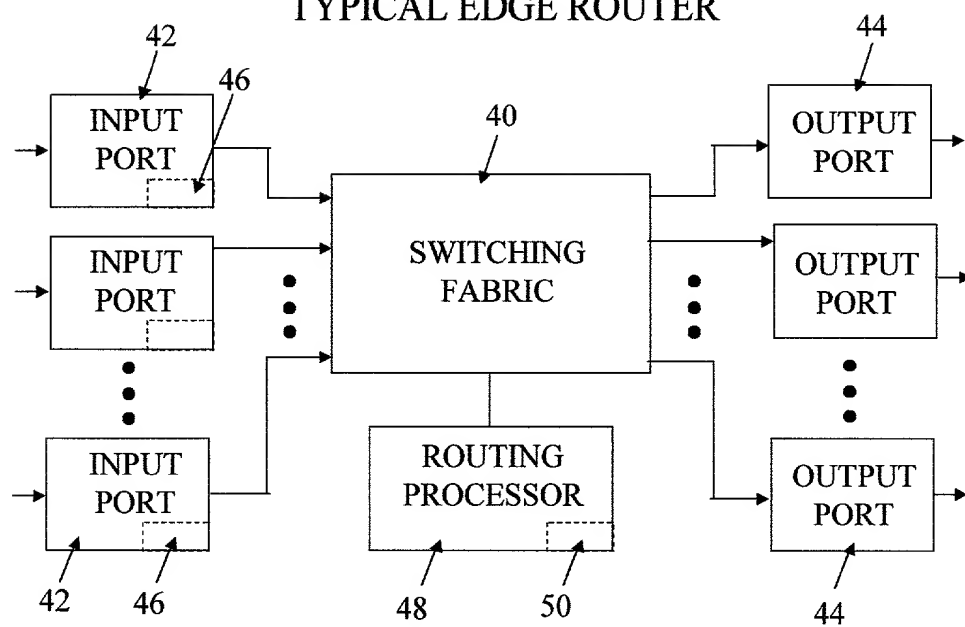DIFFSERV, IP TOS

32

LAN

22   23

24

28

LAN

30

FIG. 5

34

36

TYPICAL EDGE ROUTER

FIG. 6

CLASSIFICATION FUNCTIONALITY

SOURCE
IDENTIFICATION
CODE
(E.G. IP SOURCE)

62

QOS
TABLE

SERVICE CODE
(E.G. TOS FIELD)

66

LOOKUP
TECHNIQUE
(E.G. LMP)

CORRES-
PONDING
CODE

DETERMINE
SERVICE
CLASS

60

64

FIG. 7